

Facilitator's Guide for Module 5: Putting It All Together—Revisiting the Formative Assessment Cycle



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The facilitator's guide for Module 5 contains the following:

- A review of the key concepts in Modules 1-4;
- A participant's agenda and an annotated facilitator's agenda for the fifth 90-minute meeting of your Community of Practice (CoP);
- Appendices (materials for the CoP meeting, a list of extended learning opportunities utilizing a variety of tools to assist teachers to deepen their understanding and sustain their formative assessment practices, and a topical, annotated bibliography).

Preparations for the CoP Meeting

In preparation for facilitating the fifth meeting with your Community of Practice, you will want to complete the Module 5 online course and review this facilitator guide, including the appendices. If you have not already done so, you will also want to read or skim the readings associated with this module:

- "What a Difference a Word Makes" by Rick Stiggins and Jan Chappuis; and
- "Working Inside the Black Box: Assessment for Learning in the Classroom" by Paul Black, Christine Harrison, Clara Lee, Bethan Marshall, and Dylan Wiliam.

Prior to the meeting, you may want to have informal conversations with each participant to get a sense of their understanding of the key concepts and to remind them to bring a hard copy of their CoP prep form to the meeting.

Purpose of This CoP Meeting

This CoP meeting allows participants to revisit the formative assessment cycle in order to recognize how all of the pieces fit together and identify ideas that are important to share with the school's leadership team. The guide reviews the key concepts in Modules 1-4 and introduces a set of tools and processes in Appendix C that can be used to continue to expand educators' knowledge, strengthen their skills, and sustain their formative assessment practices.

Review of Key Concepts in Modules 1-4

Learning Goals for the CoP Meeting on Module 5:

- Understand the connections among the elements of classroom formative assessment practice
- Identify key ideas to share with the school's leadership team to help others understand what we have learned during the course, and to plan for next steps to implement formative assessment

Success Criteria for the CoP Meeting on Module 5:

- I can explain how the formative assessment cycle supports student learning and enables students to take ownership of their own learning.
- I can identify what progress I have made implementing formative assessment, and where I will go next in my learning.

The Foundations of Classroom Formative Assessment

Rhode Island's definition of formative assessment is adopted from the Council of Chief State School Officers:

Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes (CCSSO, 2008).

It is an intentional, ongoing instructional process to elicit and interpret evidence about student learning that allows a teacher and student to adjust teaching and learning to close the gap between that student's current learning and a specific learning goal. It encourages a partnership in learning between teachers and students.

CCSSO identified five characteristics of formative assessment—all of which must be part of the process:

- *Learning progressions* clearly articulate the pathway typical students take to meet a learning goal;
- *Learning goals and success criteria* are clearly defined and shared with students;
- *Descriptive feedback* is evidence based and linked to the intended instructional outcomes and success criteria;
- *Self- and peer assessment* are used frequently to encourage students to understand and internalize the success criteria; and
- *Collaboration* in the classroom creates a culture in which teachers and students are partners in learning.

Formative assessment is one part of a district’s comprehensive assessment system, which may consist of minute-by-minute formative assessment, common formative assessments (those developed by a grade-level or content-area team to assess students’ learning in a particular unit), benchmark or interim assessments, curriculum-embedded summative assessments, and annual assessments—each administered for a different purpose and often varied audiences. For example, large-scale accountability assessments, such as annual statewide assessments, are used by administrators, the public, and policymakers, while formative assessment data are used by students and teachers in the classroom.

The evidence supporting formative assessment’s positive impact on student learning comes from a spectrum of researchers approaching it from different perspectives. For more detailed information, see the handout entitled “Research Worth Knowing” on pages 20-24 in the facilitator’s guide for Module 1.

Planning for Classroom Formative Assessment

Planning for formative assessment is **the only way** that teachers can use formative evidence “on the fly” during instruction. Formative assessment processes are aligned to learning goals and, ultimately, to standards.

The formative assessment planning process is very similar to other standards-based lesson/unit planning frameworks, such as Understanding by Design (Wiggins & McTighe, 2005). The formative assessment planning process includes the following elements:

- *Understanding the **big ideas** of the unit/standards being taught;*
- *Clarifying the specific **learning goals** of a unit;*
- *Outlining what success will look like for students (**success criteria**); and*
- *Clarifying what learning looks like along the way as students progress in the unit (**learning progressions**).*

Each of these elements is described more fully in Figure 1 on the next page. For more detail, see the handout entitled “Definitions for Critical Elements of Formative Assessment Lesson Planning” on page 19 in the facilitator’s guide for Module 2).

In planning lessons, the Formative Assessment Lesson Planning Template on pages 19-20 in the facilitator’s guide for Module 3 helps teachers build habits of mind, e.g., how to approach the work, how to explore different ways of thinking about the content and the path students take to meet mastery. When done by a team of teachers, they can help each other think about the different expressions of mastery embedded within a particular standard and explore a range of instructional strategies that support learning throughout a unit. Teacher dialogue promotes shared understanding of the standards, deepens strategies for differentiating instruction based on evidence, and promotes personal accountability to implement new classroom formative assessment routines.

Figure 1. Definitions of the Critical Elements in Formative Assessment Lesson Planning

Element	Definition
Big idea	<ul style="list-style-type: none"> • Highlights an essential concept or insight that resides at the heart of the discipline • An “enduring understanding” that has lasting value, and helps support transfer of learning to other disciplines and beyond the classroom • Helps students link important facts and skills into a more coherent “mental map”; it is a theme or issue that gives meaning and connection to discrete facts and skills • May not be immediately obvious, and might need to be “uncovered” through learning
Learning goals	<ul style="list-style-type: none"> • Are directly aligned to the academic standards and the big idea of a unit • Capture the skills and/or processes students need for learning to occur • Are focused on what students will learn as a result of instruction rather than what activities they will do • Are written at the same level of understanding that is implied by the standard • Use clear and precise language • Help students make connections to prior learning and to envision future learning
Success criteria	<ul style="list-style-type: none"> • Clarify what teachers will “look for” when students are successful meeting the learning goal • Provide a scaffold and focus for students to engage in the work • Are used as the basis for students to judge the quality of their work • Are discussed and agreed upon with students prior to learning
Learning progressions	<ul style="list-style-type: none"> • Include major building blocks of learning required for students to meet the learning goal • Indicate how skills and concepts develop over time in the domain • Are checked against national and international research • Provide sufficient detail to plan for instruction and assessment

Eliciting, Interpreting, and Using Evidence of Learning

Eliciting evidence is not so much about *how* teachers do it, but about knowing *what* to collect and what to do with the information once they have it. *Evidence that is gathered but not used wastes instructional time*, so eliciting evidence should be based on what the teacher needs to know and from whom he or she needs to obtain it. Evidence can be collected on a whole class, a group of students, or specific students. If a teacher knows where a particular student is on a learning progression, she doesn’t need to assess that student.

Rather than collecting data first and then thinking about how to use it, the teacher in a formative classroom thinks first about how they will use the evidence. Once that is determined, how to gather the data becomes clear. Module 3 examines five formative assessment routines (see next page) that provide information that informs grouping of students, concepts to be re-introduced or reinforced, or skills that have been mastered.

One of the most difficult aspects of evidence collection is tracking information over time. This work needs to be documented, but not in the same way, to the same degree, or for the same purposes as “high-stakes” documentation. Eliciting and documenting learning in a formative classroom engages students more fully in the assessment process so that, in time, they become the primary authors, evidence collectors, and communicators about their progress.

Five Formative Assessment Routines

Pre-assessment allows teachers to uncover students' knowledge prior to beginning instruction. It identifies students who have already mastered some of the skills in the lesson or unit, those who have foundational knowledge that allow them to quickly grasp key concepts, and those who have misconceptions or are lacking prerequisite skills.

Classroom discussions and academic dialogue permit teachers to better understand what students know, the strategies they are using, and how they are thinking about content. The classroom climate for rich, equitable, academic dialogue requires that students feel safe to explain their answers, share their solutions or strategies with the group, or articulate partially formed ideas. Mistakes and misconceptions are valuable and important to uncover and explore.

Questioning is one of the most powerful tools teachers have to elicit and explore student thinking. A teacher's series of well-planned questions can quickly illuminate what students are thinking. Questioning to support formative assessment should involve a significant percentage of higher-order questions as they engage students in more cognitively complex thinking, e.g., formulating a summary of ideas, making inferences, creating new scenarios, or forming judgments based on evidence.

Analyzing student's written work offers rich information about what students know and about how they know it. It is not necessarily a formal, pen-and-paper task. For many students and learning goals this is not the most efficient or accurate way to establish what students know and how they are approaching their learning. When planning to gather written evidence, teachers can consider alternate forms of written assessment including drawing, concept maps, model building, representations, graphic organizers, and detailed outlines.

Observation permits teachers to meet the challenge of collecting a range of evidence from a variety of sources to document student growth and learning over time. Several routines support observation and documentation over time, e.g., whole class logs, portfolios, dialogue journals, and conferencing.

After analyzing the evidence they have gathered on students' knowledge of content and their thinking, teachers adjust their instruction on a day-to-day basis to help their students "close the gap" between their current knowledge and understanding and the desired learning goal. They select learning experiences that will appropriately challenge students. This may mean re-grouping students; re-teaching content in another way for an entire class, a small group, or an individual; changing instructional materials or resources; or adjusting the pacing or sequencing of lesson content.

Engaging Students to Take Next Steps in Learning

At the heart of formative assessment is a classroom environment in which students feel safe to take risks, to make mistakes, and to learn together. It is one in which all students feel that they are respected and valued, have an important contribution to make to their learning, and have a responsibility to contribute to their peers' learning. Teachers are pivotal in building a community of learners in their

classrooms. They bear the responsibility of modeling how to provide effective feedback and of using a gradual-release approach in teaching their students the skills of peer- and self-assessment. As students become more familiar with feedback and what to look for in quality work, they will give meaningful feedback to their peers and at the same time increase their understanding of what quality work looks like.

The regular use of descriptive feedback contributes to a classroom climate that supports formative assessment and a growth mind-set—both vital to a classroom environment that supports learning. Once students understand and can apply peer assessment routines, each can be engaged in learning with a partner—giving and receiving feedback—while the teacher supports the work of another student or gathers data for observation or feedback logs. Peer feedback enables all students to be engaged in learning at one time, thereby allowing more learning to occur.

Critical Importance of Descriptive Feedback in a Collaborative Classroom Climate

Feedback, which has an extraordinarily strong and recent research base (Hattie & Timperley, 2007; Black, Harrison, Lee, Marshall, & William, 2004; Kluger & DeNisi, 1996), is given to help learners improve performance. Students must know how to use feedback and have the opportunity to act on it. They need to know what constitutes good performance, how their current performance relates to good performance, and how to close the gap between the two. Margaret Heritage notes (2010) that effective descriptive feedback helps students understand what they have done well, and focuses on what they need to do to improve. It:

- Is **aligned** to learning goals, success criteria, and the learning progression.
- **Accurately describes** what the student is doing well using evidence from student work.
- Provides **suggestions for improvement** in learning by offering hints, clues, or guidance that support next steps in learning.
- Is **limited and prioritized** on the most important next steps, so that students have the right amount of work with which to move forward.
- **Supports students' self-regulation** by providing hints or clues that guide next steps in learning, thus helping students identify how to move learning forward.
- Is **actionable and readily implemented by students**, as students are expected to act on the feedback.
- Includes information that outlines **when opportunities will be provided** for students to act on the feedback.
- Is **monitored by teachers** to ensure a continuous cycle of feedback and application.

Developing good feedback skills takes practice, and it helps teachers to hone their skills outside of the classroom until they become automatic.

Peer and self-assessment are the key elements in supporting students to become independent and self-regulating learners. Like all learning activities, they require teacher modeling and guided practice prior

to their independent use by students. A gradual release of responsibility from teacher to students involves a variety of scaffolds (e.g., understanding the learning goal, setting success criteria, modeling feedback by teachers to the class, providing feedback on an exemplar as a group, offering feedback to a peer, and assessing their own progress). Before peer or self-assessment can occur, students must understand the learning goals and success criteria and must have practiced using effective feedback. At each stage of this work, students require feedback from teachers about the quality of their peer or self-assessment practices.

After exposure to teachers' modeling of descriptive feedback and some practice as a group, peer assessment is an excellent way to support students in their development of self-assessment skills. Through this process, they come to understand how to give and receive feedback, to recognize quality work, and to deepen their own thinking about what constitutes quality in their own work.

Several processes can build students' understanding of quality work. Students can collaborate with the teacher to define success criteria, thereby developing a clear understanding of what level of quality is expected in a piece of work. Students can look for evidence of quality work in exemplars, moderating their understanding of quality work and the range of acceptable responses for a given assignment. Class discussions and activities allow teachers to ensure that students have opportunities to reflect and build upon each other's knowledge, e.g., reviewing each other's work prior to submission. The documentation of their learning over time enables students to understand that becoming proficient in any topic requires time, reflection, and multiple opportunities to revisit important content and ideas, e.g., using the revision process.

Agenda for Module 5 Community of Practice

As the facilitator, your role is to provide opportunities for participants to reflect on their learning from the online course, deepen their understanding by discussing their learning with colleagues, and determine how to embed formative assessment in their instructional practice.

The learning goals and success criteria for the fifth 90-minute meeting of your CoP are offered below. A participant agenda and an annotated facilitator's agenda follow.

Learning Goals for the CoP Meeting on Module 5:

- Understand the connections among the elements of classroom formative assessment practice
- Identify key ideas to share with the school's leadership team to help others understand what we have learned during the course, and to plan for next steps to implement formative assessment

Success Criteria for the CoP Meeting on Module 5:

- I can explain how the formative assessment cycle supports student learning and enables students to take ownership of their own learning.
- I can identify what progress I have made implementing formative assessment, and where I will go next in my learning.

Participant Agenda for Module 5 CoP Meeting

Learning Goals:

- Understand the connections among the elements of classroom formative assessment practice
- Identify key ideas to share with the school's leadership team to help others understand what we have learned during the course, and to plan for next steps to implement formative assessment

Success Criteria:

- I can explain how the formative assessment cycle supports student learning and enables students to take ownership of their own learning.
- I can identify what progress I have made implementing formative assessment, and where I will go next in my learning.

5 minutes	Getting Started <i>Purpose:</i> Review today's agenda, learning goals, and success criteria. <i>Outcome:</i> Clarity regarding the learning goals and success criteria for today's meeting.
55 minutes	Deepen Understanding of Key Content in Modules 1-4 <i>Purpose:</i> Make connections and understand how the important concepts, skills, and knowledge of the formative assessment process fit together. <i>Outcomes:</i> Establish how different elements of the process connect to and support each other; create a mental model of the formative assessment process on chart paper.
25 minutes	Reflecting Experience <i>Purpose:</i> Brainstorm ideas to share with school's leadership team and collaboratively identify the most important. <i>Outcome:</i> Prioritized list of 4-5 ideas the CoP wants to share with the school's leadership team.
5 minutes	Evaluation

Facilitator's Agenda for CoP Meeting for Module 5

Time Allotted	Purpose/Outcome	Facilitator's Tasks	Set-up
5 minutes	<p>Getting Started Purpose: Review the CoP's agenda, learning goals, and success criteria.</p> <p>Outcome: Clarity regarding the learning goals and success criteria for today's meeting.</p>	Review agenda, learning goals, and success criteria for this meeting.	Post agenda, learning goals, and success criteria for this CoP meeting on chart paper.
55 minutes	<p>Deepen Understanding of Key Content in Modules 1-4 Purpose: Make connections and understand how the important concepts, skills, and knowledge of the formative assessment process fit together.</p> <p>Outcome: Establish how different elements of the process connect to and support each other; create a mental model of the formative assessment process on chart paper.</p>	<p>In preparation for this culminating activity, explain a concept map and its purpose (see example on page 25 in Appendix B). Ask participants, in teams or groups of 3-4, to create a concept map on formative assessment, building off of their individual reflections from the online course for Module 5. The purpose is to deepen their understanding of how the ideas in the course are connected by providing them with a way of articulating those connections.</p> <p>Give each team or group a set of pre-printed cards and some blank cards. Ask them, in the next 30 minutes, to review them and discuss how the ideas represented in the cards are connected and determine which are the:</p> <ul style="list-style-type: none"> • Key concepts; • Supporting ideas; or • Specific facts, skills, or tools used during the practice of formative assessment. <p>As they identify each card's category, ask them to code them by letter or color:</p> <ul style="list-style-type: none"> • K = key concept (green) • S = supporting idea (yellow) 	<p>Enough copies of "Instructions for Creating a concept Map of the Formative Assessment Process" on pages 15-16 in Appendix B for each participant.</p> <p>A set of pre-printed cards printed on heavier paper for each group (on pages 17-24 in Appendix B).</p> <p>Sheets of chart paper, markers, tape, and blank cards for each group.</p> <p><i>Note: Teams will use as many cards as they can on their map, and may not have time to use everyone given the time frame.</i></p> <p>Post the key for the cards on chart paper (either letters or colors):</p> <ul style="list-style-type: none"> • K = key concept (green) • S = supporting idea (yellow) • T = tool or skill used during practice of formative assessment (pink)

Time Allotted	Purpose/Outcome	Facilitator's Tasks	Set-up
		<ul style="list-style-type: none"> T = tool or skill used during practice of formative assessment (pink) <p>After 30 minutes, ask each group to post its concept map on the wall and explain it to the larger group (15 minutes). As teams are presenting, chart important ideas they raise as they are speaking.</p> <p>After each group has shared its map, ask participants in teams, or pairs, to talk about one or two ideas that they saw on another map and how that idea(s) would change their map (5 minutes).</p>	
25 minutes	<p>Reflecting Experience Purpose: Brainstorm ideas to share with school's leadership team and collaboratively identify the most important.</p> <p>Outcomes: Prioritized list of 4-5 ideas that will help the leadership team clarify:</p> <ul style="list-style-type: none"> What teachers have learned in this course; and What are the next steps for teachers as they continue to implement formative assessment. 	<p>Following on the discussion from the previous activity, ask participants to brainstorm important ideas about formative assessment they would like to share with the school's leadership team. To spark their thinking, have them skim the list of options for collaborating with their peers and then ask:</p> <ul style="list-style-type: none"> What have you noticed about how your own instructional practice has shifted as a result of this work? What do you feel is a next step in your own learning? What do you feel is a next step for our collective (team or school-wide) learning? <p>During this brainstorm, work on simply creating a list of ideas. Discussion will follow later.</p>	<p>Chart paper, markers, and colored dots.</p> <p>Enough copies of "Building Your Capacity to Implement Formative Assessment: Different Options for Collaborating with Peers" on page 29 in Appendix C for every participant.</p>

Time Allotted	Purpose/Outcome	Facilitator's Tasks	Set-up
		<p>Once all of their ideas are captured, give them three different, colored dots and ask them to put them next to their first (one color), second (another color), and third (final color) choice. Identify their top 4-5 ideas and determine how they will be shared with the leadership team.</p> <p><i>Note: At the conclusion of this activity, you may want to share some of the tools in Appendix C with them.</i></p>	
5 minutes	Evaluation Purpose: Gather feedback about this session.	Ask participants to complete the evaluation form.	Enough copies of the evaluation form on page 26 in Appendix B for each participant.
90 minutes in total			

Appendix A: My Initial Reflections on Module 5

Putting It All Together – Revisiting the Formative Assessment Cycle

Name: _____

From my perspective, the key ideas about the formative assessment process are:

Appendix B: Handouts and Evaluation Form

Instructions for Creating a “Concept Map” of the Formative Assessment Process

Background Information

A concept map is a backwards planning tool that outlines important concepts, skills, and knowledge to teach and assess. A concept map allows others to quickly see how concepts, skills, and knowledge are related or linked with a domain. A concept map also helps to identify a sequence for ordering instruction within a unit of instruction, by clarifying how ideas are connected within a unit. This deepens a student’s understanding by helping to create a mental picture of the learning that is expected.

Today’s work will involve developing a concept map to display the key concepts/ideas, knowledge, and skills or tools that connect and support each other in formative assessment. The result will be a “mental picture” of formative assessment.

Assignment

In teams, or groups of 3-4, create a concept map about formative assessment. Your team/group will work with pre-printed cards to organize and represent a concept map that addresses the following prompt:

How can we best represent the important ideas and concepts of formative assessment in a way that highlights their connections and relationships?

As people develop increased expertise in a subject, their “mental models” of that topic become more sophisticated and they begin to see connections between previously disconnected ideas. This concept map can help you and new users of formative assessment understand and distinguish between:

- Key concepts of formative assessment;
- Supporting ideas in formative assessment; and
- Specific facts, skills, or tools used during the practice of formative assessment.

The process for team/group work—developing and posting your concept map (35 minutes)

1. Review the cards and discuss how the ideas represented in the cards are connected – determining which ones are key concepts, supporting concepts, or facts, skills, and/or tools.
2. Use blank cards to add ideas that you feel are important to include on the concept map.
3. Your team may select not to include every pre-printed card on the concept map.

4. Highlight key concepts in green, supporting ideas in yellow, and skills and tools in pink. (An alternative would be to label key concepts with a “K,” supporting ideas with an “S,” and tools and skills with a “T.”)
5. Tape your cards to your sheet of chart paper and add arrows or other visuals to show connections between ideas.

Sharing your concept maps (20 minutes)

1. Post your concept map on the wall.
2. Each team explains its map to the larger group.
3. Post commonalities and differences on sheets of chart paper.
4. After each group has shared its map, in your team/group, or in pairs, talk about one or two new ideas you saw on another map or heard a group explain that would change your current map.

Big Ideas	Learning progressions
Learning goals	Success criteria
Pre-assessment	Classroom discussion

Analysis of student work	Documenting student progress over time
Peer assessment	Self-assessment
Gathering evidence	Conferencing with students

Descriptive feedback	Improvement in student learning outcomes
Co-constructing success criteria	Partners in learning
Using evidence to adjust instruction	Student engagement

Questioning techniques	Zone of proximal development
Formative assessment lesson planning template	Analyzing/ Interpreting evidence
Intentional planning for formative assessment	Common Core State Standards

Sequencing and scaffolding learning	Understanding curricula
Dialogue and reflection	Student work
Collaborative planning	Differentiating instruction

Classroom discussions and academic dialogue	Demonstration of knowledge
Observation	Students as primary authors
Students as primary evidence collectors	Students as primary communicators about their progress

Re-teaching	Re-grouping
Collaborative classroom environment	Adjusting pace or sequence of lesson
Instructional routines	Opportunities to act on feedback

Self-regulating learners	Teacher modeling and guided practice
Exemplars	

Example of a Concept Map



**Rhode Island Department of Education
Formative Assessment Community of Practice
Module 5 Evaluation**

Consider the following **before and after** questions, which help us better understand your background knowledge:

	Mostly unfamiliar	Somewhat unfamiliar	Somewhat knowledgeable	Very knowledgeable
Before this session, my knowledge of how the key concepts, supporting ideas, and specific facts, skills, or tools used during the formative assessment process are connected was...				
After this session, I would characterize my knowledge of how the key concepts, supporting ideas, and specific facts, skills, or tools used during the formative assessment process are connected as...				
Before this session, my knowledge of the most important ideas we should share with the leadership team was...				
After this session, I would characterize my knowledge of the most important ideas we should share with the leadership team as....				

Please clarify what you would change about today's session or where you are seeking additional support:

1. To move my own learning forward in formative assessment, I could use continued support in the following:
2. What didn't work for me (or what I would change) from today's session:

Appendix C: Extended Learning Opportunities and Tools

If members of the CoP would like to continue deepening and extending their understanding of formative assessment, a list of several ways to collaborate with peers to build their capacity is on page 29. A set of tools, each briefly described below, follow. CoP members may choose to adopt a tool as presented, to adapt it for use in their specific context, or to allow the examples to spark their thinking to develop their own tool to move formative assessment forward in their team or school.

Tool: *Guiding Ideas and Questions for Peer Review of the Formative Assessment Lesson Planning Template* (pages 30-31)

Purpose: To receive feedback from and give feedback to a colleague to strengthen the linkage between learning and assessment in your classrooms

Participants: Two teachers, a teacher and a coach, or a grade-level or content-area team

Time Commitment: 15-20 minutes per participant

Appropriate Stage in Educators' Learning Cycle: From first attempt to incorporate formative assessment practices into their lessons

Throughout the process of developing and implementing the formative assessment lesson plan, peers and/or the school's instructional coach can be a teacher's greatest support. Teachers are working together to implement new practices in their classrooms, and the questions, insights, and recommendations they receive from their peers or a coach can move their practice forward faster.

The questions in this tool are linked to the Formative Assessment Lesson Planning Template on pages 19-20 in the facilitator's guide for Module 3.

Tool: *Protocol for Classroom Observation Tool*

Purpose: To use as a framework for deepening educators' understanding of specific aspects of the formative assessment process

Participants: Host teacher and single colleague, host teacher and their grade-level or content-area colleagues, or host teacher and instructional coach

Time Commitment: 2-3 hours per classroom visit, including pre-observation conference and follow-up discussion

Appropriate Stage in Educators' Learning Cycle: After several months of professional development on various attributes of formative assessment

In Module 4, a Formative Assessment Classroom Observation and Lesson Planning Tool was introduced for use in an extended learning opportunity (see pages 28 and 30-34). It is a valuable tool for bridging theory to practice around formative assessment implementation. A protocol teachers or coaches can use with this observation tool follows on pages 35-36.

Tool: *School-wide Walk-through Tool (“Assessing a School’s Progress along a Continuum of Formative Assessment Practice”)* (pages 34-41)

Purpose: To assess implementation of different attributes of the formative assessment process in each classroom in a school; to identify school-wide needs for additional professional development to move formative assessment forward in the school

Participants: Leadership team or team of educators

Time Commitment: One-half to full day to complete one cycle

Appropriate Stage in Educators’ Learning Cycle: Several times during the learning cycle; perhaps, after one or two attributes have been introduced and enough time has elapsed for teachers to explore those practices in their classrooms

This tool is meant to be used by a school leadership team or a team of educators to assess the implementation of formative assessment practices in a school to identify areas for continued professional development. It is recommended that a school leadership team select one element to review and complete a pre-post assessment over a period of time. The process involves collecting data, discussing findings collectively, and developing recommendations about professional development based on those findings.

Tool: *Building a Classroom Environment that Supports Formative Assessment, a Walk-about Form*

Purpose: To assess presence of key elements in a classroom that support formative assessment and obtain ideas from colleagues

Participants: Individual teachers, coaches, and/or principals; teams of teachers; or as a school-wide tool during a faculty meeting

Time Commitment: 10-15 minutes per classroom

Appropriate Stage in Educators’ Learning Cycle: Mid-cycle, after they have had time to explore the use of the formative assessment process in their classrooms

In a formative assessment classroom, there are many elements that influence the culture of learning in the classroom. Specific elements support students taking ownership of their learning. In addition, the classroom environment must be arranged in ways that allow students to work individually, with peers in small groups, or in whole-class activities, and in multiple modalities. As Smith and McGregor report (1992), learning depends on rich classroom contexts that set the stage to challenge students to improve their work and to develop higher-order reasoning and problem-solving skills. This tool allows educators to track evidence of those key elements that contribute to a classroom environment that supports formative teaching and learning in a single or multiple classrooms.

Building Your Capacity to Implement Formative Assessment: Different Options for Collaborating with Peers

1. Share your formative assessment planning template with a colleague or your grade-level or content-area team for feedback. You can use the tool on pages 30-31 in Appendix C, entitled “Guiding Ideas and Questions for Peer Review of Formative Lesson Planning Template,” as a guide.
2. With your grade-level or content-area team (or a colleague) develop a learning progression for an instructional unit in your grade or content area.
3. Determine a particular formative assessment practice to implement in your classroom with a colleague. Observe each other implementing the practice in class and share feedback with each other.
4. Co-teach with a colleague, using a particular formative assessment routine or strategy for eliciting evidence. At the end of the lesson, discuss how well the routine or strategy worked, the evidence gathered, and your plan for how you will share feedback with students.
5. After implementing a formative assessment practice and eliciting evidence of learning from your students, sit down with a colleague to explain the learning goals. Then, together review the data and determine how your instruction might be modified as a result of those data.
6. Use resource teachers to pre-teach a lesson to a subset of students in your classroom. Mix student groups up, so that members of the groups are not always the same.
7. Regroup students across classrooms to better meet their learning needs.
8. View a video as a team, or with a colleague, to examine a teacher’s use of formative assessment practices. Identify one take-away you are each committed to practicing, and plan to come back together to review what you observed about student learning as a result of the new practice.
9. Use the jigsaw process to examine formative assessment resources, such as videos and articles, which address needs of individuals or groups of teachers. After reading, discuss the implications of the article’s key themes or research findings on your formative assessment practice.

Guiding Ideas and Questions for Peer Review of Formative Assessment Lesson Planning Template

Throughout the process of developing and implementing the formative assessment lesson plan, your peers can be your greatest support. You are working together to link instruction and assessment in the classroom, and the questions, insights, and recommendations that you receive from peers can move your practice and theirs forward faster.

These questions are linked to the state's Formative Assessment Lesson Planning Template. In the beginning, it will be helpful to share your plan with a peer to give and receive feedback from them on your plans. These conversations will strengthen each of your plans and deepen your understanding of the process of formative assessment.

Academic content standard(s)

- Upon what academic standard(s) is this unit built?

Big idea(s)

- What are the big idea(s) that you want students to understand by the end of the unit?

Learning goals

- What will students know and be able to do as a result of this unit, i.e., how would you describe the learning goals of this unit?
- How are the goals connected to the academic standards upon which the lesson is constructed?
- Are the goals presented in language students will understand?
- Are the learning goals focused on what students will learn from instruction, rather than what activities they will do?
- Are the learning goals written at the same level of understanding (rigor) as the standard?

Success criteria

- Considering both knowledge and skill attainment, what do you anticipate students will be able to do differently as a result of this unit?
- Do the success criteria capture what the teacher and students can “look for” to know that a learning goal has been met?

Student-friendly learning goals

- What will you do to ensure that all students have a clear picture of what success looks like?
- Do the student-friendly success criteria help students capture what to “look for” to know that they have met the learning goal?

Student-friendly success criteria

- What will you do to ensure that all students have a clear picture of what success looks like?

Misconceptions students are likely to have as they work on the unit learning goals

- Based on your knowledge and previous experience, what misconceptions do you anticipate that students may have as they work on the unit learning goals?
- How are you prepared to address those misconceptions as they arise during the unit?

Strategies to share learning goals and success criteria with students

- What strategies will you use to share learning goals and success criteria with students?

Classroom strategies to elicit evidence

- How will you gather data that tells you what students do and do not understand
 - At the start of the lesson?
 - In the middle of the lesson?
 - At the end of the lesson?
- How will you record that information and analyze it to inform the next steps in the lesson?

Key questions I will pose during instruction

- What questions will you pose to deepen and extend students' learning
 - At the start of the lesson?
 - In the middle of the lesson?
 - At the end of the lesson?
- What strategies will you use to encourage students to build upon each other's responses to the key questions?

Descriptive feedback

- Will you provide descriptive feedback
 - At the start of the lesson?
 - In the middle of the lesson?
 - At the end of the lesson?

Strategies for self- and/or peer assessment

- What modeling or scaffolding is needed to ensure students can fully participate in the self- and peer assessment activities?
- What strategies could you use for self- and/or peer assessment
 - At the start of the lesson?
 - In the middle of the lesson?
 - At the end of the lesson?

Protocol for Classroom Observation Tool¹

Pre-Observation Conference:

The pre-conference should take place as close to the observation as possible, e.g., the day before or within hours of it. Participants may include one or more colleagues and, if possible, an instructional coach, who can facilitate the post-observation conference.

During the 20-minute pre-observation conference, the host teacher should explain the following to a colleague(s):

- Describe the learning goal and success criteria for the lesson, the strategies for gathering evidence and offering feedback, and how students will be encouraged to assess their own learning.
- Situate the day's lesson in the unit, e.g., what has come before and what will come after this lesson.
- Present a brief summary of the lesson components and activities that the observer(s) will see.
- Identify one or two formative assessment aspects from the Formative Assessment Classroom Observation and Lesson Planning Tool that the colleague(s) should focus on during the observation. (*Note: Experience has shown it is hard to collect useful data on more than one formative assessment aspect in a lesson.*)

If more than one observer is involved, the colleague observers will agree on a plan to distribute data-gathering responsibilities among themselves in order to conduct more focused observations and to provide more comprehensive feedback to the host teacher.

Observing the Lesson:

- The host teacher explains why a colleague(s) is in the classroom and the purpose of his or her visit to the students, e.g., to help him or her get feedback and learn to be better at what he or she does. Students are in school to learn, while their teachers work to continuously learn and improve, too.
- The colleague observer(s) gathers data on the specific task the host teacher identified.
- The colleague observer(s) records descriptive data/notes on the specified tasks in the appropriate sections on the Formative Assessment Classroom Observation and Lesson Planning Tool (pages 30-34 in Module 4).

Debrief of Lesson:

- The colleague observer(s) thanks the host teacher for his or her efforts.

¹ Adapted from the protocol of the *Syracuse Collaborative Coaching and Learning: A Tool for Lesson Study*, Sue Winer and the Harvard Graduate School of Education's Instructional Rounds process by Adam Tanney, NYCC, RMC Research Corporation; Susan Janssen, NYCC, EDC; and Nancy Zarach, Syracuse City School District.

- The facilitator guides the lesson debrief with questions outlined in the table below—always keeping the focus of the conversation on the formative aspects that the host teacher identified.

Step 1: Host teacher reflects <i>What is your reaction to the lesson?</i>	The host teacher comments on her or his reaction to the lesson, e.g., what occurred during the lesson, what worked well, and what might have been done differently.
Step 2: Observers share descriptive data <i>What did you see?</i> <i>(Note: A small amount of feedback that is clear and specific is easier to act on than lots of different feedback, which can be confusing.)</i>	The colleague observer(s) shares data from his or her observation that are directly related to the aspects of the lesson the host teacher requested. These data should be observable facts. Data can be shared on one aspect at a time until all new data are exhausted. If there is more than one colleague observer and similar data has already been shared, he or she will note they “observed what others did on your questions” and move on to share new data.
Step 3: Analysis discussion <i>Based on the observation data, what do we wonder?</i> <i>(Note: The host teacher can take the lead here or can ask observers to share their thoughts.)</i>	An interactive conversation between the host teacher and the colleague observer(s) occurs. This is a collaborative conversation among colleagues. Ideas from the observers should be framed as, “I wonder...”, e.g., “I wonder if the students all fully grasped the success criteria?”
Step 4: Next steps in your learning about formative assessment <i>What do you see as the next steps for yourself in learning about formative assessment?</i>	The host teacher takes the lead in determining his or her next steps, including how the learning from this experience will influence upcoming work with colleagues or additional knowledge and skill he or she will seek. The colleague observer(s) steps into a collaborating or consulting stance only if necessary.
Step 5: Any other aspects of the lesson to discuss <i>What other aspects of the lesson, pertaining to the use of formative assessment, do you want to discuss?</i>	This is the time to have a more open, unstructured discussion about other aspects of the lesson pertaining to formative assessment that colleague observer(s) or the host teacher wish to discuss.
Step 6: Informing the thinking of the colleague observer <i>(To the colleague observer(s): What do this observation and the ensuing conversation leave you thinking about in terms of formative assessment in your classroom?)</i>	This is the time for the colleague observer(s) to reflect on the host teacher’s model lesson and to share thoughts about what he or she is thinking about after having seen the lesson. Since teachers have tended to focus their answers throughout the lesson debrief in terms of what the students need to do next, it may be important for the facilitator to phrase the question carefully so teachers focus their response on the use of formative assessment in their classrooms.

Directions for Use of Whole School Observation Tool

“Assessing a School’s Progress along a Continuum of Formative Assessment Practice”

This tool is meant to be used by a leadership team to assess the implementation of formative assessment practices in a school (by selecting one element to review and completing a pre-post assessment over a period of time) and to identify areas for continued professional development. It can also be used to identify teachers skilled in formative assessment practices, who could be observed by and/or mentor others.

The tool identifies specific practices that are labeled “developing,” “improving,” and “exemplary.” If used over time, it can track the school’s development of formative assessment practices related to a particular component. Results from this exercise, along with data on student outcomes, could be powerful elements of the school’s assessment of its progress as well as information to share with the school’s larger community.

The process involves collecting data, discussing findings collectively, and developing recommendations about professional development based on those findings. One school had different members of its leadership team, which included teachers from each content area and grade level, develop their walk-through tool. The leadership team crafted a schedule for visits over a one-week period. Teacher leaders used their daily planning time to visit a number of classrooms, so that each day leadership team members visited approximately 25 classrooms. The leadership team convened after their walk-throughs to discuss their findings and their collective recommendations. The findings and recommendations were documented and shared with the staff.

As a team, you may want to adapt the school-wide assessment tool that follows and the process outlined above to fit your context or to focus on formative assessment practices that have been central to your professional development activities. You will want to implement this process after several months of professional development dedicated to understanding and exploring the formative assessment process in classrooms. Repetition of the process heralds the fact that educators continue to learn and perfect their practice day-to-day and year-to-year.

Directions

1. The leadership team reviews the tool for “Assessing a School’s Progress Along a Continuum of Formative Assessment Practice” and, if necessary, adapts it to its context and discusses the process involved.
2. The leadership team establishes pairs, determines which pairs will visit each classroom, and sets date(s) for the walk-throughs.
3. On the day of the walk-throughs, each pair receives enough copies of the tool for each class it will walk through, and the team meets briefly to answer lingering questions and review the process before they begin.

4. The pairs complete their walk-throughs, review their findings—noting commonalities and differences in observations, and discuss the implications of their findings that they wish to share with colleagues on the leadership team.
5. The leadership team meets to review its findings, identifies two or three implications for future professional development (whole school, subsets of teachers, mentoring, classroom observations by faculty), and determines who will draft the document with findings and recommendations to share with the whole school.
6. The leadership team reviews the draft document. Revisions are made, if needed, and findings are shared with faculty via a whole school meeting, grade-level or content-areas teams, or another configuration.
7. Further professional development in formative assessment is offered, and the walk-through cycle begins again.

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

CCSSO Formative Assessment Attribute	Developing Practice	Improving Practice	Exemplary Practice
Learning goals and success criteria are clearly defined and shared with students	<ul style="list-style-type: none"> • The teacher develops learning goals to define student learning expectations in each lesson and unit. • The teacher develops success criteria that indicate the observable traits showing what success will “look like” when students reach the intended learning goal. • The teacher shares learning goals and success criteria with students. 	<ul style="list-style-type: none"> • The teacher and students co-create success criteria. • Learning goals and success criteria are written in student-friendly language. • Criteria are made explicit through the use of strong and weak examples of work. • Students have multiple opportunities to explore learning goals and success criteria through the unit. 	<ul style="list-style-type: none"> • Students are able to apply the success criteria to their own work. • Students are able to apply the success criteria to the work of peers. • Students are able to describe both short and long-term learning goals. • The teacher and students have shared understanding and ownership of meeting the learning goals.
<i>Evidence observed in specific phase of the continuum</i>			

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

CCSSO Formative Assessment Attribute	Developing Practice	Improving Practice	Exemplary Practice
Descriptive feedback is evidence based and is linked to the intended instructional outcomes and criteria for success	<ul style="list-style-type: none"> • The teacher uses a range of tools and strategies to elicit evidence of learning within each lesson in order to gather evidence and provide feedback. • Feedback practices are primarily led by the teacher. • Feedback is aligned with the learning goals and success criteria. • The teacher plans for opportunities to give and receive feedback. 	<ul style="list-style-type: none"> • Teacher feedback is aligned to the learning goals/success criteria and includes recognition of what students have accomplished and ideas for how to improve. • The teacher models effective descriptive feedback practices. • Students have opportunities to practice giving and receiving feedback. 	<ul style="list-style-type: none"> • There is evidence that every member of the classroom can provide effective descriptive feedback. • There is evidence that every member of the classroom can receive effective descriptive feedback. • Time is built into the classroom routines for students to use and apply feedback. • The teacher uses varied feedback approaches—oral, written, conferencing.
<i>Evidence observed in specific phase of the continuum</i>			

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

CCSSO Formative Assessment Attribute	Developing Practice	Improving Practice	Exemplary Practice
<p>Self- and peer assessment are used frequently to encourage students to understand and internalize the success criteria</p>	<ul style="list-style-type: none"> • The teacher’s planning includes developing key points where students will participate in self- and peer assessment. • The teacher develops tools that help students assess (e.g., checklists, exit cards, concept maps) and monitors (e.g., learning logs, response journals, unit planners) their progress. • Students revise their work based on input from the teacher or peers. 	<ul style="list-style-type: none"> • The teacher implements strategies that support students to learn how to self-regulate learning. • The teacher plans opportunities to observe peer assessment to give feedback on the student’s peer assessment process. • The teacher provides feedback to students on the quality of their peer assessment. • Students are given frequent opportunities to peer- and self-assess. • Students receive support to use the evidence collected during the peer assessment process. • Students set goals based on their assessment data and feedback. 	<ul style="list-style-type: none"> • Students are able to use learning goals and success criteria to review and provide feedback on the work of peers. • Students are able to use learning goals and success criteria to accurately self-assess their work. • Students show evidence of being able to self-monitor their learning and select appropriate learning tasks. • Students are a primary source of feedback in the classroom.
<p><i>Evidence observed in specific phase of continuum</i></p>			

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

CCSSO Formative Assessment Attribute	Developing Practice	Improving Practice	Exemplary Practice
Collaboration in the classroom creates a culture in which teachers and students are partners in learning	<ul style="list-style-type: none"> • The teacher is primarily in charge of “leading” the learning in the classroom. • Collaborative practices include dialogue and discussion that is primarily led by the teacher. • The teacher establishes practices that encourage revision and reflection in which more recent (improved) work has greater value than work done earlier in the learning process. 	<ul style="list-style-type: none"> • Students are encouraged to be active agents in their own learning • The teacher models acceptance of feedback from students, noting when they themselves make mistakes and what they will do to correct them. • The teacher solicits feedback from students, asking for specific descriptive information about instructional tasks. 	<ul style="list-style-type: none"> • The classroom exhibits a “safe” climate for collaboration, where risk-taking and getting wrong answers are seen as acceptable aspects of the learning process. • Students and the teacher are “partners” in the learning process.
<i>Evidence observed in specific phase of the continuum</i>			

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

CCSSO Formative Assessment Attribute	Developing Practice	Improving Practice	Exemplary Practice
Learning progressions clearly articulate the pathway typical students travel to meet the learning goal	<ul style="list-style-type: none"> • The teacher develops written learning progressions for instructional units. • The teacher uses learning progressions to develop lessons and units that align to the long-term learning goals. • The teacher develops varied strategies to elicit evidence of learning at key points along the learning progression. 	<ul style="list-style-type: none"> • The teacher articulates to students how individual lessons are connected to a larger learning goal. • The teacher uses strategies that elicit students’ prior knowledge before beginning a new unit to understand where students are on the learning progression as the unit begins. • The teacher uses strategies that elicit evidence throughout the lesson/unit to collect data about students’ progress along the learning progression. 	<ul style="list-style-type: none"> • There is evidence that the teacher knows where each student is on the learning progression. • There is evidence that students understand where they are on the learning progression. • Students are able to apply what they know about the learning progression to explore their next steps in learning.
<i>Evidence observed in specific phase of continuum</i>			

School-wide Walk-through Tool – Assessing a School’s Progress Along a Continuum of Formative Assessment Practice

Implications of evidence/observations for school-wide professional development in formative assessment:

Class/Teacher:

Date:

Leadership Team Member:

Building a Classroom Environment That Supports Formative Assessment

Walk-about Form

Key elements of building a classroom environment that supports formative assessment	Evidence
<p><i>The classroom is set up for a range of instructional approaches.</i></p> <p>There is adequate space for:</p> <ul style="list-style-type: none"> • Whole group teaching • Small group work • Individual, reflective work • Project workshop 	
<p><i>The classroom displays include information about current learning targets.</i></p> <p>Displays include evidence of:</p> <ul style="list-style-type: none"> • Big ideas • Standards • Learning goals • Success criteria 	
<p><i>The classroom displays showcase the progress and process of student work.</i></p> <p>Displays include evidence of:</p> <ul style="list-style-type: none"> • Brainstorms • Students' questions • Feedback • Documentation of the learning process 	
<p><i>The classroom displays include elements that can be used as sources of new ideas and new learning.</i></p>	
<p><i>The classroom displays include a range of final products of student work with descriptive feedback.</i></p>	
<p><i>Student work is displayed in a way that values student contributions, is coherent, and aesthetically free from distracting decorations.</i></p>	
<p><i>Resources that facilitate formative assessment (e.g., whiteboards) or self-assessment (colored pencils, stoplight stickers) are easily accessible to students.</i></p>	
<p><i>There are ample books, materials, and artifacts available to invite students to respond, investigate, research, and question.</i></p>	

Annotated Bibliography

General References on Formative Assessment

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2004). Working inside the black box: Assessment for learning in the classroom. *Phi Delta Kappan*, 86, 9-21.

Unanswered in the authors' previous work, this book answers the question: "Is there evidence of how to improve formative assessment?" In doing so, it presents a variety of living examples of formative assessment implementation by classroom teachers. To find the answer to that question, the authors planned and implemented a program in which a group of teachers were supported in developing innovative practices of formative assessment in their classrooms. They describe the teachers' work and the evidence that their work did raise standards. Then, they discuss their main findings and the fundamental issues involved. Finally, they present their recommendations for taking these ideas and practices forward in schools.

Black, P., Harrison, C., Lee, C., & Wiliam, D. (2003). *Assessment for learning: Putting it into practice*. New York, NY: Open University Press.

The starting point of this book was the realization that research studies worldwide provide hard evidence that development of formative assessment raises students' test scores. The significant improvement in the achievements of the students in this project confirms this research, while providing teachers, teacher trainers, school heads and others leaders with ideas and advice for improving formative assessment in the classroom. The book is based on a two-year project involving thirty-six teachers in schools in England. After a brief review of the research background and the project itself, successive chapters describe the specific practices which teachers found fruitful and the underlying ideas about learning that these developments illustrate. Later chapters discuss the problems that teachers encountered when implementing the new practices in their classroom and give guidance for school management and LEAs about promoting and supporting the changes.

Chappuis, J. (2009). *Seven strategies of assessment for learning*. Portland, OR: Educational Testing Service.

This book organizes research-based recommendations about classroom assessment practices around three formative assessment questions: "Where am I going?"; "Where am I now?"; and "How can I close the gap?" The framework is sequenced so that readers can easily weave assessment for learning practices into daily teaching and assessment activities.

Chappuis, J. (2005). Helping students understand assessment. *Educational Leadership*, 63, 39-43.

The author addresses the necessary components of formative assessment and presents seven strategies designed to help students better understand their learning goals, recognize their own skill level in relation to the goals, and take responsibility for reaching the goals.

Davies, A. (2011). *Making classroom assessment work (3rd ed.)*. Bloomington, IN: Solution Tree, Building Connections Publishing Inc.

This book combines powerful ideas with practical strategies to implement quality classroom assessment. Use assessment *for* learning to guide instruction, provide feedback, collect evidence of learning, present evidence of success, and produce accurate standards-based report cards. The framework provides a guide for teachers—from involving students, parents, and community members in the assessment process to evaluating and reporting progress.

Earl, L. M. (Ed.). (2010). *Assessment as learning: Using classroom assessment to maximize student learning (2nd ed.)*. Thousand Oaks, CA: Corwin Press.

Learn to embrace assessment not just as a tool for student evaluation but as a valuable strategy for everyday classroom learning. Classroom assessment, done well, is a very powerful tool for achieving high-level learning for all students.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. New York: Routledge.

Written for students, pre-service and in-service teachers, this book explains how to apply the principles of visible learning to any classroom. The author offers concise and user-friendly summaries of the most successful interventions and offers practical step-by-step guidance to the successful implementation of visible learning and visible teaching in the classroom.

Heritage, M. (2010). *Formative assessment: Making it happen in the classroom*. Thousand Oaks, CA: Corwin Press.

This research-based book helps educators develop the knowledge and skills necessary to successfully implement formative assessment in the classroom. The author walks readers through every step of the process and offers specific examples to illustrate the implementation of formative assessment across a range of subject areas and grade levels. This book explains how to: clearly articulate learning progressions, learning goals, and success criteria; select strategies for assessment and provide quality feedback; engage students in self-assessment and self-management; and create a classroom environment that values feedback as part of the learning process. It also provides guidance to school administrators who want to promote school-wide implementation of formative assessment.

Heritage, M. (2007, October). Formative assessment: What do teachers need to know and do? *Phi Delta Kappan*, 89, 140-145.

To many, assessment is synonymous with high-stakes standardized tests. But there is an entirely different kind of assessment that can transform both teaching and learning. The author describes what the skillful use of formative assessment looks like.

McManus, S. (2008). *Attributes of effective formative assessment: A work product coordinated by Sarah McManus*. Washington, DC: Council of Chief State School Officers.

In this brief report, CCSSO discusses the definition of formative assessment, describing it as a process involving active participation of both students and teachers. Next, five attributes or critical features of formative assessment are described including learning progressions, learning goals and criteria for success, descriptive feedback, self- and peer assessment, and collaboration. Definitions and examples are included for each attribute. This report concludes with suggested readings.

Organisation for Economic Co-operation and Development. (2005). *Formative assessment: Improving learning in secondary classrooms*. Paris: OECD.

Several countries promote formative assessment as a fundamental approach to education reform. The OECD has studied the use of formative assessment in eight educational systems: Australia (Queensland), Canada, Denmark, England, Finland, Italy, New Zealand, and Scotland. The study has also brought together reviews covering English, French, and German language research literature. This policy brief looks at the results of that study, including policy principles to address barriers to formative assessment and encourage its wider use.

Popham, W. J. (2009, April). A process, not a test. *Educational Leadership*, 66, 85-86.

"Formative assessment is not a test," says James Popham in this article. "Rather, it is an ongoing process in which teachers use test-elicited evidence to adjust their instruction or students use it to adjust their learning tactics." Popham provides four crucial steps in making this process work properly.

Popham, W. J. (2010). *Classroom assessment: What teachers need to know* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

With its constant attention to the instructional implications of educational assessment, *Classroom Assessment: What Teachers Need to Know*, helps readers become assessment literate—to understand the fundamental concepts and processes of educational testing that will influence teachers' hour-to-hour instructional decisions. The text recognizes and highlights the exponential increase in the importance of educational assessment in an era of common core state standards, national assessment consortia, and teacher-evaluations based on students' test scores.

Shepard, L. A. (2005). Linking formative assessment to scaffolding. *Educational Leadership*, 63, 66-70.

This article provides a clear overview of formative assessment research and its link to student learning goals. Shepard proposes that formative assessment and instructional scaffolding are essentially the same thing. Formative assessment uses insights about a learner's current understandings to alter the course of instruction and thus support the development of greater competence. Scaffolding refers to supports that teachers provide the learner during problem solving—in the form of reminders, hints, and encouragement—to ensure successful completion of a

task. Four strategies illustrate the strong connection between formative assessment and research on learning: eliciting prior knowledge, providing effective feedback, teaching for transfer of knowledge, and encouraging student self-assessment. While there are many articles and sources on formative assessment, this article provides one of the clearest links between the key strategies for improved learning outcomes and formative assessment processes.

Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational Researcher*, 29, 4-14.

This article is about classroom assessment—not the kind of assessments given to give grades or to satisfy the accountability demands of an external authority, but rather the kind of assessment that can be used as part of instruction to support and enhance learning.

Stiggins, R. J., Arter, J., Chappuis, J., & Chappuis, S. (2004). *Classroom assessment for student learning: Doing it right—using it well*. Portland, OR: Assessment Training Institute.

This action guide is designed to help educational leaders achieve their school improvement goals. It provides a structure through which they can review and refine their vision of excellence in assessment for their school or district; examine the skills and knowledge needed to support their vision; and then chart a path by developing a plan of action designed to turn their vision into reality. By using the materials in this guide with school leadership teams, they can design a comprehensive plan for achieving a balanced, instructionally relevant local assessment system in which both classroom assessments *for* learning and standardized assessments *of* learning are used effectively to serve their intended purposes.

Stiggins, R. (2007). Assessment through the student's eyes. *Educational Leadership*, 64, 22-26.

The author argues that the focus of assessment should shift from ranking students by achievement level to assessment that supports learning for all students. He defines and describes the process of assessment *for* learning and then presents two scenarios to illustrate how teachers can use assessment to set up students for success and help them turn failure into achievement. He concludes with recommendations to help redefine assessment practices.

Wiliam, D. (2007). Five “key strategies” for effective formative assessment. *NCTM Research Brief*. Reston, VA: The National Council of Teachers of Mathematics.

The author proposes that formative assessment can be built up from five “key strategies”: clarifying, sharing and understanding goals for learning and criteria for success with learners; engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of students' learning; providing feedback that moves learning forward; activating students as owners of their own learning; and activating students as learning resources for one another. Examples are provided for each strategy.

Wiliam, D. (2011). *Embedded formative assessment*. Bloomington, IN: Solution Tree Press.

Formative assessment plays an important role in increasing teacher quality and student learning when it's viewed as a process rather than a tool. Emphasizing the instructional side of formative assessment, this book explores in-depth the use of classroom questioning, learning intentions and success criteria, feedback, collaborative and cooperative learning, and self-regulated learning to engineer effective learning environments for students. It includes research and examples of practice in those five organizers for classroom assessment.

Professional Development and Formative Assessment

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the U.S. and abroad*. Dallas, TX: National Staff Development Council.

This report presents key findings from a research project sponsored by the National Staff Development Council. Data and findings drawn from this study are used to establish benchmarks for assessing progress in professional development over time. Taken as a whole, this work provides the most comprehensive picture and far-reaching analysis of professional learning that has ever been conducted in the United States.

Eaker, R., & Keating, J. (2008). A shift in school culture. *Journal of Staff Development*, 29, 4-17.

The increased popularity of the term “professional learning community” has not, as yet, resulted in the actual application of the concept in the majority of schools and districts throughout North America. The challenge of changing culture is the challenge of changing behavior, of persuading people to act in new ways. Engaging the faculty in a collaborative process to articulate the school’s core values or collective commitments is a powerful—and often overlooked—way to shape school culture.

Leahy, S., & Wiliam, D. (2011). From teachers to schools: Scaling up professional development for formative assessment. In Gardner, J. (Ed). *Assessment and Learning (2nd ed.)*. London: SAGE Publications Ltd.

This book places learning at the center of our concerns and explicitly underscores the importance of assessment in that learning. This new edition provides a comprehensive overview of assessment that is used to support learning, practice-based theory on assessment for learning, and formative assessment to support individual development and motivate learners. Readers will find research-informed insights from a wide variety of international contexts.

Trumbull, E., & Gerzon, N. (2013). Professional development on formative assessment: Insights from research and practice. San Francisco: WestEd.

Considering both the complex task of learning formative assessment and the limited time and resources available for professional development in most schools and districts, this paper analyzes current formative assessment professional development to answer three primary questions. What do we know about how to best support teacher learning in the area of formative assessment? Which professional learning designs lead to the classroom changes necessary to implement formative assessment fully? What needs to be in place for professional learning to positively impact student learning? This paper reviews best practice in professional development and reflects on how to best apply these findings to scale-up formative assessment practice.

Wiliam, D. (2007). Content then process: Teacher learning communities in the service of formative assessment. In Reeves, D., (Ed.), *Ahead of the curve. The power of assessment to transform teaching and learning*. Bloomington, IN: Solution Tree.

This chapter reasons that improving formative assessment practices is likely to be a more effective and efficient investment than other reforms, such as decreasing class size, changing school structure, or raising teachers' content knowledge. Wiliam further reasons that professional development is the only way to improve formative assessment practices and that "building-based teacher learning communities," are the best professional development vehicle to do so. The second part of the chapter introduces a definition of five key strategies for formative assessment that Wiliam and his colleagues have developed. Wiliam gives examples of each strategy.

Wylie, E. C., Lyon, C. J., & Goe, L. (2009). *Teacher professional development focused on formative assessment: Changing teachers, changing schools*. Princeton, NJ: ETS.

This paper outlines an approach to improving learning and teaching that combines two strong research bases: The research on formative assessment or assessment for learning provides information about what to change; research on teacher learning communities guides decisions about how to change. In this paper the authors describe the content and process for one model of teacher development. Two cases studies for two school districts engaged in this process of teacher change are then presented along with descriptions of the observed effects on both the participating teachers and their larger school contexts.

Research on Formative Assessment

Bangert-Drowns, R. L., Kulik, C-L. C., Kulik, J. A., & Morgan, M. (1991). The instructional effect of feedback in test-like events. *Review of Educational Research*, 61, 213-238.

Feedback is an essential construct for many theories of learning and instruction, and an understanding of the conditions for effective feedback should facilitate both theoretical development and instructional practice. In an early review of feedback effects in written instruction,

Kulhavy (1977) proposed that feedback's chief instructional significance is to correct errors. This error-correcting action was thought to be a function of presentation timing, response certainty, and whether students could merely copy answers from feedback without having to generate their own. The present meta-analysis reviewed 58 effect sizes from 40 reports. Feedback effects were found to vary with control for research availability, type of feedback, use of pretests, and type of instruction and could be quite large under optimal conditions. Mediated intentional feedback for retrieval and application of specific knowledge appears to stimulate the correction of erroneous responses in situations where its mindful (Salomon & Globerson, 1987) reception is encouraged.

Black, P. J., & Wiliam, D. (2010). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, 92, 81-90.

Black and Wiliam argue that formative assessment is an integral part of classroom instruction and that its implementation can significantly improve student learning outcomes. The authors begin by examining whether or not there is research showing that improvements to formative assessment practices in the classroom raise standards, and they find that students who experience formative assessment strategies, particularly low achievers, demonstrate significant learning gains. The authors review different ways in which formative assessment can be improved, and then offer four steps to implementing improvement strategies.

Bransford, J. D., et al., (Eds.), National Research Council (U.S.), Committee on Developments in the Science of Learning and National Research Council, Commission on Behavioral and Social Sciences and Education. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition*. Washington, DC: National Academy Press.

This book offers exciting new research about the mind and the brain that provides answers to a number of compelling questions. When do infants begin to learn? How do experts learn and how is this different from non-experts? What can teachers and schools do—with curricula, classroom settings, and teaching methods—to help children learn most effectively? New evidence from many branches of science has significantly added to our understanding of what it means to know, from the neural processes that occur during learning to the influence of culture on what people see and absorb.

How People Learn examines these findings and their implications for what we teach, how we teach it, and how we assess what our children learn. The book uses exemplary teaching to illustrate how approaches based on what we now know result in in-depth learning. This new knowledge calls into question concepts and practices firmly entrenched in our current education system.

Brookhart, S. M. (2010). Teacher inquiry into formative assessment practices in remedial reading classrooms. *Assessment in Education: Principles, Policy, and Practice*, 17, 41-58.

Six remedial reading teachers in a large, rural school district participated in a form of professional development called Teaching as Intentional Learning, based on an inquiry process. Their topic of

inquiry was formative assessment. Professional development comprised both direct instruction and inquiry learning in teachers' own classrooms. This study describes the strategies they experimented with, their professional growth in formative assessment, and effects on students. All six teachers showed important professional growth, as indicated by their own reflections and also by their supervisor's observations. In first grade, at-risk students assigned to these project teachers had increased reading readiness scores on one measure (DIBELS PSF) compared with at-risk students assigned to non-project teachers.

Cowie, N. (1995). Students of process writing need appropriate and timely feedback on their work and in addition, training in dealing with that feedback. *Saitama University Review*, 31, 181-94. Saitama, Japan: Saitama University.

A discussion of the use of feedback in process-oriented second language writing instruction focuses on students' need for feedback, the most effective ways of providing it, appropriate timing for feedback, and how students use this information. Literature on feedback in process-oriented writing instruction is reviewed in light of each of these issues, and some suggested classroom responses to the research findings are outlined, including methods of giving feedback (reformulation, topical structure analysis, student self-monitoring, peer response) and ways of evaluating these methods for effectiveness. The role of learner strategy training in giving and using feedback is then explored briefly. In conclusion, the principles of effective feedback are summarized.

Hattie, J., & Timperley, H. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.

This book is the result of 15 years of research and synthesis of over 800 meta-analyses on the influences on achievement in school-aged students. The research involved many millions of students and represents the largest ever evidence-based research into what actually works in schools to improve learning. A model of teaching and learning is developed based on the notion of visible teaching and visible learning. The major message is that what works best for students is similar to what works best for teachers—an attention to setting challenging learning intentions, being clear about what success means, and an attention to learning strategies for developing conceptual understanding about what teachers and students know and understand.

Heritage, M., Kim, J., Vendlinksi, T., & Herman, J. L. (2009). From evidence to action: A seamless process in formative assessment? *Educational Measurement: Issues and Practice*, 28, 24-31.

Based on the results of a generalizability study of measures of teacher knowledge for teaching mathematics developed at the National Center for Research on Evaluation, Standards, and Student Testing at the University of California, Los Angeles, this article provides evidence that teachers are better at drawing reasonable inferences about student levels of understanding from assessment information than they are at deciding the next instructional steps. The authors discuss the implications of the results for effective formative assessment and end with considerations of how

teachers can be supported to know what to teach next. They conclude that in order to move from evidence to action, teachers must have a better understanding of how learning develops and deeper knowledge of the content domain.

Herman, J., Osmundson, E., Dai, Y., Ringstaff, C., & Timms, M. (2011). Relationships between teacher, knowledge, assessment practice, and learning—Chicken, egg, or omelet? CRESST Report 809. Los Angeles: National Center for Research on Evaluation, Standards, and Student Testing.

Drawing from a large efficacy study in upper elementary science, this report had three purposes: first to examine the quality of teachers' content-pedagogical knowledge in upper elementary science; second, to analyze the relationship between teacher knowledge and their assessment practice; and third, to study the relationship between teacher knowledge, assessment practice, and student learning. Based on data from 39 teachers, CRESST researchers found that students whose teachers frequently analyzed and provided feedback on student work had higher achievement than students whose teachers spent less time on such activities. The findings support other research indicating the power of well-implemented formative assessment to improve learning.

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, 119, 254-284.

Since the beginning of the century, feedback interventions (FIs) produced negative—but largely ignored—effects on performance. A meta-analysis (607 effect sizes; 23,663 observations) suggests that FIs improved performance on average ($d = .41$) but that over one-third of the FIs decreased performance. This finding cannot be explained by sampling error, feedback sign, or existing theories. The authors proposed a preliminary FI theory (FIT) and tested it with moderator analyses. The central assumption of FIT is that FIs change the locus of attention among three general and hierarchically organized levels of control: task learning, task motivation, and meta-tasks (including self-related) processes. The results suggest that FI effectiveness decreases as attention moves up the hierarchy closer to the self and away from the task. These findings are further moderated by task characteristics that are still poorly understood.

National Research Council, Committee on the Foundations of Assessment, Pelligrino, J., Chudowsky, N., & Glaser, R., (Eds). (2001). *Knowing what students know: The science and design of educational assessment*. Washington, DC: National Academy Press.

An authoritative text on educational assessment grounded in research in cognitive and measurement sciences, this book offers guidance for policy, research, and practice that spans classroom and large scale contexts. Most valuable to us and our clients in the project was the fourteen page executive summary. Its recommendations include recognizing supporting “the development of new systems of multiple assessments that would improve their ability to make decisions about education programs and the allocation of resources” and shifting “the balance of mandates and resources” “from an emphasis on external forms of assessment to an increased

emphasis on classroom formative assessment designed to assist learning.” Also among the coverage is the fact that “every assessment, regardless of its purpose, rests on three pillars: cognition, observation, and interpretation.”

Palincsar, A. S., & Brown, A. L. (1984). *Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities*. New York: Routledge, Taylor and Francis Group.

Two instructional studies directed at the comprehension—fostering and comprehension—monitoring activities of seventh grade poor comprehenders are reported. The four study activities were summarizing (self-review), questioning, clarifying, and predicting. The training method was that of reciprocal teaching, where the tutor and students took turns leading a dialogue centered on pertinent features of the text. In Study 1, a comparison between the reciprocal teaching method and a second intervention modeled on typical classroom practice resulted in greater gains and maintenance over time for the reciprocal procedure. Reciprocal teaching, with an adult model guiding the student to interact with the text in more sophisticated ways, led to a significant improvement in the quality of the summaries and questions. It also led to sizable gains on criterion tests of comprehension, reliable maintenance over time, generalization to classroom comprehension tests, transfer to novel tasks that tapped the trained skills of summarizing, questioning, and clarifying, and improvement in standardized comprehension scores. Many of these results were replicated in Study 2. In contrast to Study 1, which was conducted by an experimenter, Study 2 examined group interventions conducted by volunteer teachers with their existing reading groups.

Sadler, D. R. (1989). Formative assessment and the design of instructional strategies. *Instructional Science*, 18, 119-144.

The author defines feedback in a way to highlight its function in formative assessment. He identifies three conditions for effective feedback and their implications. A key premise is that for students to be able to improve, they must develop the capacity to monitor the quality of their own work during actual production. This, in turn, requires that students possess an appreciation of what high quality work is, that they have the evaluative skill necessary for them to compare with some objectivity the quality of what they are producing in relation to the higher standard, and that they develop a store of tactics or moves which can be drawn upon to modify their own work. It is argued that these skills can be developed by providing direct authentic evaluative experience for students.

Sadler, D. R. (1998). Formative assessment: Revisiting the territory. *Assessment in Education: Principles, Policy, and Practice*, 5, 77-84.

In this article, the author comments on a formative assessment review article by Black and Wiliam (1998), highlighting certain points with particular attention to issues regarding quality feedback. The author argues that students must be taught how to understand feedback and how to use suggestions to improve their work. The author also mentions the inequality between student and teacher and how the nature of that relationship should be recognized to help understand how to

communicate effective feedback. Teacher knowledge to provide feedback includes superior content knowledge, dispositions towards the activity and learners, skills to construct tests and devise tasks, knowledge of criteria and standards, evaluative expertise, and experience determining effective feedback. The author concludes that quality of feedback includes both the accuracy/appropriateness of the teacher's response and effectiveness of communication to the learner, and that exploring the quality of feedback should be a key focus of future research.

Shute, V. J. (2008). Focus on formative assessment. *Review of Educational Research*, 78, 153-189.

This article reviews research on feedback, with a focus on formative feedback—defined as information communicated to the learner that is intended to modify his or her thinking or behavior to improve learning. According to researchers, formative feedback should be non-evaluative, supportive, timely, and specific. Formative feedback is usually presented as information to a learner in response to some action on the learner's part. It comes in a variety of types (e.g., verification of response accuracy, explanation of the correct answer, hints, worked examples) and can be administered at various times during the learning process (e.g., immediately following an answer, after some time has elapsed). Finally, several variables have been shown to interact with formative feedback's success at promoting learning (e.g., individual characteristics of the learner and aspects of the task). All of these issues are discussed. This review concludes with guidelines for generating formative feedback.

Torrance, H., & Pryor, J. (1998). *Investigating formative assessment*. Buckingham, UK: Open University Press.

Based on empirical work with classes of 4- to 7-year-olds in English primary schools, this book provides an analysis of how classroom assessment occurs within routine teacher-student interaction. The chapters are: (1) "Introduction"; (2) "Defining and Investigating Formative Assessment"; (3) "Teachers' Perceptions of 'Teacher Assessment'"; (4) "Classroom Assessment and the Language of Teaching"; (5) "The Power of Assessment: Appropriating Children's Responses for Learning, or Social Control?"; (6) "Formative Assessment and Learning: Where Psychological Theory Meets Educational Practice"; (7) "Ask a Genuine Question, Get a Genuine Answer"; (8) "Constructing and Integrating Assessment and Learning"; and (9) "Formative Classroom Assessment: Prospects for Improvement." An appendix contains the transcript conventions for classroom interaction.

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

The primary purpose of this book is to characterize the uniquely human aspects of human behavior, and to offer hypotheses on the way these traits have been formed in the course of human history and the way they develop over an individual's lifetime.

In these essays Vygotsky outlines a theory of cognitive development that anticipates much recent work in American social science. The mind, the author argues, cannot be understood in isolation from the surrounding society. Man is the only animal who uses tools to alter his own inner world as

well as the world around him. In *Mind in Society* Vygotsky applies this theoretical framework to the development of perception, attention, memory, language, and play, and he examines its implications for education.

Big Ideas

Bruner, J. (1960). *The process of education*. Cambridge, MA: Harvard University Press.

In this classic argument for curriculum reform in early education, Bruner shows that the basic concepts of science and the humanities can be grasped intuitively at a very early age. He argues persuasively that curricula should be designed to foster such early intuitions and then build on them in increasingly formal and abstract ways as education progresses.

Wiggins, G., & McTighe, J. (2005). *Understanding by design (2nd ed.)*. Alexandria, VA: Association for Supervision and Curriculum Development.

Understanding by Design poses the core, essential questions of understanding and design, and provides readers with practical solutions for the teacher-designer. The book opens by analyzing the logic of backward design as an alternative to coverage and activity-oriented plans. This approach brings more focus and coherence to instruction. The book proposes a multifaceted approach, with the six “facets” of understanding. The facets combine with backward design to provide a powerful, expanded array of practical tools and strategies for designing curriculum, instruction, and assessments that lead students at all grade levels to genuine understanding.

Learning Progressions

Corcoran, T., Mosher, F., & Roigat, A. (2009). *Learning progressions in science, an evidenced-based approach to reform*. New York: Consortium for Policy Research in Education, Center on Continuous Instructional Improvement, Teachers College, Columbia University.

The purpose of this report is to describe the work that has been done so far on learning progressions in science, examine the challenges to developing usable learning progressions, determine if further investments are warranted, and if so, what investments are needed to realize their promised benefits. The report examines the quality and utility of the work done to date and identifies the research gaps that would have to be addressed in the fields in order to move the work forward. The authors hope that this assessment of these fields of work will inform the national research and development agenda and be useful to those interested in learning progressions, including researchers, curriculum developers, teacher educators, assessment developers, and policymakers.

Heritage, M. (2008). *Learning progressions: Supporting instruction and formative assessment*. Washington, DC: Council of Chief State School Officers.

This paper describes the characteristics of learning progressions and how they can support teachers' use of formative assessment.

Leahy, S., & Wiliam, D. (2011, April). Devising learning progressions. Paper presented at the Symposium on How to Build Learning Progressions at the annual meeting of the American Educational Research Association, New Orleans, LA.

A number of widely-accepted definitions of formative assessment are based on three key instructional processes: 1) establishing where learners are in their learning; 2) where they are going; and 3) how to get there. It is therefore not surprising that there is increasing agreement that a clear articulation of learning progressions—an agreed upon view of “what it is that gets better when someone gets better at something”—is helpful, and perhaps essential, for effective formative assessment. However, learning progressions are rarely independent of curricular sequencing. One student will learn different things, and in a different sequence, from other students in the same classroom, and of course, in many areas, there is little or no agreement about the sequence in which particular elements in the curriculum ought to be taught. This paper attempts to clarify the nature of learning progressions and proposes a way in which teachers might collaborate to produce learning progressions that would usefully describe the progress of their students, thus assisting the teachers in providing helpful guidance about future steps in learning.

Shavelson, R. J. (2009, June). *Reflections on learning progressions*. Paper presented at the Learning Progressions in Science (LeaPS) Conference, Iowa City, IA.

Learning progressions descriptions of increasingly sophisticated ways of thinking about or understanding a topic (National Research Council, 2007) represent a promising framework for developing organized curricula and meaningful assessments in science. In addition, well-grounded learning progressions may allow for coherence between cognitive models of how understanding develops in a given domain, classroom instruction, professional development, and classroom and large-scale assessments. Because of the promise that learning progressions hold for bringing organization and structure to often disconnected views of how to teach and assess science, they are rapidly gaining popularity in the science education community. However, there are significant challenges faced by all engaged in this work. This paper outlines issues related to four aspects of work on learning progressions: defining learning progressions; developing assessments to elicit student responses relative to learning progressions; modeling and interpreting student performance with respect to a learning progression; and using learning progressions to influence standards, curricula, and teacher education.

Learning Goals and Success Criteria

Arter, J., & Spandel, V. (1992). Using portfolios of student work in instruction and assessment.

Educational Measurement: Issues and Practice, 11, 36-44.

This article is intended to clarify the notion of portfolio assessment and help users design such assessments in a thoughtful manner. The authors begin with a discussion of the rationale for assessment alternatives and then discuss portfolio definitions, characteristics, pitfalls, and design considerations.

Gregory, K., Cameron, C., & Davies, A. (2011). *Knowing what counts: Setting and using criteria*.

Bloomington, IN: Solution Tree, Building Connections, Inc.

This book is divided into three sections to make it easy for educators to navigate the strategies and ideas. The first section outlines a four-step process for working with students to set criteria that encourage participation, understanding, and ownership. The authors provide specific examples of what each step in this process might look like. The second part of the book offers 10 ways to assess student work and provide specific and descriptive feedback to help students improve their learning and academic performance—without assigning a mark or using a traditional grading system. The third section provides a list of common questions educators may have as they attempt to implement the strategies described in the first two sections. The authors respond to these questions in detail and provide examples for ways educators can adjust the strategies to their specific needs.

Marzano, R. J. (2009). *Designing and teaching learning goals and objectives: Classroom strategies that work*. Denver: Marzano Research Laboratory.

Design and teach effective learning goals and objectives by following strategies based on the strongest research and theories available. This book includes a summary of key research behind these classroom practices and shows how to implement each one by using step-by-step, hands-on strategies. The author translates theory into action, details the impact of well-designed and well-taught goals and objectives, and offers recommendations for classroom practice. Short quizzes help readers assess their understanding of the instructional best practices explained in each section. The book can be used as a personal resource or as a group study tool.

Eliciting, Interpreting, and Using Evidence

Andrade, H. G. (2000). Using rubrics to promote thinking and learning. *Educational Leadership*, 57, 13-18.

Rubrics make assessing student work quick and efficient, and they help teachers justify to parents and others the grades that they assign to students. At their very best, rubrics are also teaching tools that support student learning and the development of sophisticated thinking skills. When used correctly, they serve the purpose of learning as well as of evaluation and accountability. Like

portfolios, exhibitions, and other authentic approaches to assessment, rubrics blur the distinction between instruction and assessment. For that reason, the author refers to them as instructional rubrics. In this article, she defines instructional rubrics and explains why it is important to use them.

Brookhart, S. M. (2008) *How to give effective feedback to your students*. Alexandria, VA: ASCD.

This guide focuses on what kinds of feedback work best, when and how often to give feedback, and how to use oral, written, and visual feedback. It provides examples of good feedback to help the reader to choose the right feedback strategy and tailor it to different kinds of learners, including successful students, struggling students, and English language learners.

Brookhart, S.M. (2009). Feedback that fits. *Educational Leadership*, 64, 54-59.

This article describes the conceptual differences between effective and ineffective feedback for students. Good formative assessment gives students information they need to understand where they are in their learning (the cognitive factor) and develops students' feelings of control over their learning (the motivational factor). The article addresses ways to deliver valuable feedback, identifies the best content for feedback, and notes the importance of relating it to the learning goal. It offers practical tips on making feedback helpful to students, and concludes by offering examples of effective and ineffective feedback on a student's writing assignment.

Brookhart, S.M. (2010). *Formative assessment: Strategies for every classroom (2nd ed.)*. An ASCD action tool. Alexandria, VA: ASCD.

The formative assessment process helps teachers and students focus on learning goals, take stock of current work in relation to these goals, and move closer to reaching them. As students focus on their work, see and monitor their progress, and understand both what they are learning and how they learn, they become true learners. This book identifies the specific skills and strategies students need to learn to assess themselves in the classroom and describes how those strategies can be presented in the context of subject-area material through the introduction of student tools. All tools include clear instructions for use, suggestions for variations, and guidance on next steps.

Burns, M. (2005). Looking at how students reason. *Educational Leadership*, 63, 26-31.

The author describes how she has learned to incorporate assessment purposefully into every mathematics lesson she teaches. This tells her whether the lesson was accessible to all students while challenging the more capable, what the students learned and still need to know, how she can improve the lesson and make it more effective, and what other lesson she might offer as an alternative. The article includes strategies for assessing students' learning through written assignments and through class discussion.

Fisher, D., & Frey, N. (2009). Feed up, feed back, feed forward. *Educational Leadership*, 67, 20-25.

The authors present their two-fold answer to how to use assessment data to inform instruction. First, educators need to understand the three components of any powerful feedback system:

establish a clear purpose, so students understand the learning tasks at hand; provide feedback to students, which directly relates to the learning goal; and use assessment data to plan future instruction. Second, educators need to align all multiple measures to create a coherent system of data collection, analysis, and instruction to provide a portrait of how students are progressing toward a common goal.

Gerzon, N. (2011). *Five instructional routines for eliciting evidence of student thinking and learning*. Woburn, MA: Learning Innovations at WestEd.

Formative assessment involves continuously collecting and using evidence to move student learning forward. Students and teachers work together to use that evidence as they strive to ensure that learning is continuously on track. Rather than thinking about formative assessment as requiring lots of evidence collection strategies, this paper outlines five classroom routines through which teachers can elicit evidence of learning. It provides an introduction to how these classroom routines can support continuous evidence collection and use in formative assessment.

Gregory, K., Cameron, C., & Davies, A. (2011). *Knowing what counts: Conferencing and reporting* (2nd ed.). Bloomington, IN: Solution Tree, Building Connections Publishing, Inc.

When we involve students in conferencing and reporting, they take a lead role by selecting and showing work samples, demonstrating skills, talking about their learning, and asking their audience for a response. In addition to teachers, students are data-based instructional decision makers, too, and the authors provide examples of ways to support learning by involving students in conferencing and reporting processes. The first section includes ideas for how to help students initiate informal conversations about their learning. In the second section, the authors describe different types of conferences in which students review their learning. The third section provides a list of common questions educators may have about the content presented in the first two sections.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77, 81-112.

Feedback is one of the most powerful influences on learning and achievement, but this impact can be either positive or negative. Its power is frequently mentioned in articles about learning and teaching, but surprisingly few recent studies have systematically investigated its meaning. This article provides a conceptual analysis of feedback and reviews the evidence related to its impact on learning and achievement. This evidence shows that although feedback is among the major influences, the type of feedback and the way it is given can be differentially effective. A model of feedback is then proposed that identifies the particular properties and circumstances that make it effective, and some typically thorny issues are discussed, including the timing of feedback and the effects of positive and negative feedback. Finally, this analysis is used to suggest ways in which feedback can be used to enhance its effectiveness in classrooms.

Self- and Peer Assessment

Dweck, C. (2007). The perils and promises of praise. *Educational Leadership*, 65, 34-39.

Research has found that students have two views of their intelligence. Some believe it is a fixed trait; others believe it is something they can develop through effort and education. Students in the fixed mind-set group avoid risks and reject opportunities to learn if they might make mistakes. Students with a growth mindset, take on challenges, stick with them, and care about learning. Dweck and her colleagues found that praising students for their intelligence tends to put students in the fixed mind-set, while praise for effort tends to put them into the growth mind-set. Examples of process praise are offered.

Heritage, M. (2009). Using self-assessment to chart students' paths. *Middle School Journal*, 40, 27-30.

This article discusses the use of self-assessment to chart the course of students' learning. Rather than experiencing school as a journey on an unknown sea to an unknown destination, it is possible for students to use formative self-assessment as a navigational chart and compass—to know where they are going, how they are going to get there, and whether they need to make learning adjustments along the way. At a time when lifelong learning is an expectation for personal and societal success, the author suggests that it is incumbent upon middle school educators to take advantage of their students' stage of development and make self-assessment, as a means of learning how to learn, an essential part of teaching and assessment practices.

Reynolds, A. (2009). Why every student needs critical friends. *Educational Leadership*, 67, 54-57.

The author describes her use of peer critiques as her students work on major projects, both during the creation process and their presentations of their learning to classmates. She describes the benefits and shares practices that help students the most from peer critiques.

Leading Formative Assessment

Moss, C. & Brookhart, S. (2009). *Advancing formative assessment in every classroom: A guide for instructional leaders*. Alexandria, VA: ASCD.

This book is a practical guide designed for school leaders to help implement formative assessment practices in schools. The text is guided by three questions: Where am I going? Where am I now? What strategy or strategies can help me get to where I need to go? Chapter topics include essential elements of the formative assessment process, sharing learning targets and criteria for success, student goal setting and self-assessment, strategic teacher questioning, and implementing formative assessment school-wide. The authors include examples and practical classroom strategies based on their work with teachers, information about how to model formative assessment strategies for teachers, and reflection questions to monitor understanding and progress.

Chappuis, S. (2004). *Leading assessment for learning: Using classroom assessment in school improvement*. *Texas Association of School Administrators Professional Journal - INSIGHT*, 18, 18-22.

The importance of school leadership to student learning is well accepted, but defining what actually constitutes good leadership remains difficult. This practitioner-focused article offers practical principles for leadership related specifically to assessment FOR learning. Included is a ten-point framework of leadership knowledge and skill to promote assessment FOR learning, consisting of points such as "the leaders understand the necessity of clear academic achievement targets, aligned classroom-level achievement targets, and their relationship to the development of accurate assessments." The article also covers examples of what teachers do when they use assessment as instruction and promote student involvement.

Chappuis, S., Stiggins, R. J., Arter, J. A., & Chappuis, J. (2009). *Assessment for learning: An action guide for school leaders* (2nd ed.). Boston: Allyn & Bacon, Inc.

This action guide is designed to help educational leaders achieve their school improvement goals. It provides a structure through which they can review and refine their vision of excellence in assessment for their school or district; examine the skills and knowledge needed to support their vision; and then chart a path by developing a plan of action designed to turn their vision into reality. By using the materials in this guide with school leadership teams, they can design a comprehensive plan for achieving a balanced, instructionally relevant local assessment system in which both classroom assessments *for* learning and standardized assessments *of* learning are used effectively to serve their intended purposes.

Davies, A., Herbst, S., & Reynolds, B.P. (2011). *Leading the way to assessment for learning: A practical guide*. Bloomington IN: Solution Tree, Building Connections Publishing, Inc.

Designed to support school and system instruction leaders and full of examples of successful assessment practices, this guide offers a practical approach to the challenges of meeting traditional evaluation standards while assessing learning. Understand how to collect and present reliable and valid evidence of learning to stakeholders, and also how to involve learners—both students and adults—in assessment for learning.

Davies, A., Herbst, S., & Reynolds, B.P. (2011). *Transforming schools and systems using assessment: A practical guide*. Bloomington IN: Solution Tree, Building Connections Publishing, Inc.

Research shows that the single most powerful solution to improving education is quality assessment for learning. Using stories and samples, the authors illustrate the assessment processes that enable leaders to successfully work toward school transformation and identify trouble before it happens. Also featured are practical ideas and tools to support every leader and leadership team to problem solve along the way.

Stiggins, R., & Chappuis, J. (2006). What a difference a word makes: Assessment FOR learning rather than assessment OF learning helps students succeed. *Journal of Staff Development*, 27, 10-14.

The purpose of this paper is to discuss assessment *for* learning. Stiggins and Chappuis note that assessment *for* learning leads to dramatic improvements in student achievement, yet teacher education programs rarely include this kind of assessment training. The authors describe five keys to classroom assessment quality including clear purposes, clear targets, sound design, effective communication, and student involvement, and they provide effective resources in assessment *for* learning. The authors argue that many off-the-shelf assessment programs labeled “formative” do not actually help teachers apply the strategies proven to be effective in their classroom practice and cannot replace the professional development needed to improve teachers’ assessment practices.

Wylie, C., & Lyon, C. (2009). What schools and districts need to know to support teachers’ use of formative assessment. *Teachers College Record*.

The authors have helped teachers employ formative assessment practices in various districts. This article describes their perspectives on this work. They contend that in addition to working directly with teachers, attention must be given to school and district administrators if formative assessment practices are to take root and grow. At the teacher level, the learning and unlearning for teachers demanded by formative assessment necessitates attention to research on effective professional development. The authors explore research by Darling-Hammond. They also affirm that professional learning communities are one important vehicle to providing the right professional development. However, because “ongoing professional development also puts new demands on the school system” to protect and grow the investments in teachers, school and district administrators need knowledge of both formative assessment and professional development.

Online Resources

Research/Overview

Examples of formative assessment, West Virginia Department of Education website
<http://wvde.state.wv.us/teach21/ExamplesofFormativeAssessment.html>

Written Examples of Formative Assessment Strategies

Brookhart, S. M. (2011, October). Assessment (at all levels) in service of learning: Getting the balance right (slides 12 and 26). Presentation at meeting of the Maryland Assessment Research Center for Education Success. (Retrieved from
<http://www.education.umd.edu/Depts/EDMS/MARCES/conference/formative/presentations/Brookhart%202011.pdf>.)

Listen while you work: Using informal assessments to adjust your instruction by Kristi Johnson Smith,
<http://www.learnnc.org/lp/editions/firstyear/260>

Questions to promote higher-order thinking, Prince George's County website for teachers

<http://www.pgcps.org/~elc/isquestiontopromote.html>

Strategic questioning techniques, Australia Assessment for Learning module

http://www.assessmentforlearning.edu.au/professional_learning/strategic_questioning/strategic_questioning_landing_page.html (Click on background for key ideas from research on the role of questioning in assessment for learning.)

Strategies to enhance peer feedback, Australia Assessment for Learning module,

http://www.assessmentforlearning.edu.au/professional_learning/modules/peer_feedback/peer_strategies_enhance.html

Techniques for gathering data during observations, <http://wvde.state.wv.us/teach21/Observations.html>

The power of student self-assessment – Overview of student self-assessment by Best Practices Weekly (5:11 minutes), <http://www.youtube.com/watch?v=-XJ8f9yLteQ>

Using praise to enhance resilience and learning outcomes – This article, which reviews Carol Dweck's work, focuses on the positive effects that offering praise for effort has over praise focused on students' intelligence. <http://www.apa.org/education/k12/using-praise.aspx>

Experts Talk about Formative Assessment

Feedback in formative assessment – Using formative feedback to scaffold learning, Margaret Heritage, Iowa State Department of Education Assessment for Learning website (22:47 minutes),

<https://aea111.eduvision.tv/Default.aspx?q=CT1wecDsedCk4DuibE5mXw%253d%253d>

Podcast of interview with Kate Garrison, Manager of Products and Services for Professional Development with Measured Progress, in which she addresses the culture of formative assessment (21:38 minutes),

<http://www.amle.org/Publications/TodaysMiddleLevelEducator/tabid/1409/Default.aspx?name=formative%20assessment>

The growth mindset – An interview with Carol Dweck, Professor of Psychology at Stanford University, www.youtube.com/watch?v=ICILzbB1Obg

The 'just right' learning gap, Margaret Heritage, Iowa State Department of Education Assessment for Learning website (5:46 minutes), <https://aea111.eduvision.tv/Default.aspx> (Search for Margaret Heritage, then select the video on the "just right" learning gap.)

Dylan Wiliam's video on outcomes and challenges faced in implementing formative assessment (3:31 minutes), www.journeytoexcellence.org/uk (Search for Dylan Wiliam, then select video entitled "Assessment for Learning: Dylan Wiliam.")

Dylan Wiliam's video on the value of self- and peer assessment (2:31 minutes),
<http://vimeo.com/31887765>

Formative Assessment Classroom Videos

Descriptive Feedback

Developing inquiring minds: Teachers demonstrate effective descriptive feedback, Part I (9:27 minutes)
– Primary school teachers demonstrate how to provide feedback to each other about their writing.
<http://www.youtube.com/watch?v=X1BZRkSvlwY>

Developing inquiring minds: Teachers demonstrate effective descriptive feedback, Part II (6:08 minutes)
– Students reflect on teachers' descriptive feedback, thereby creating success criteria, and then pair off to practice giving feedback to a peer. <http://www.youtube.com/watch?v=Q70c9SyZ6Sk>

KS3 APP – Designing APP assessment for math (13:45 minutes) – High school students investigate the use of angles through an analysis of playing pool. The clip (beginning to 6:10 minutes) shows the teacher using questioning strategies to help students move forward in their application of key learning goals.
www.teachfind.com/node/282

Precision teaching: Writing conferences student and teacher – Primary school teacher providing descriptive feedback to students on their writing, eliciting self-assessment from students, and determining next steps (9:26 minutes).
<http://www.youtube.com/watch?v=njLGV3drzRo&list=UUkTf5EuPvT4ZTknb-Fck0yw&index=85>

Peer and Self-Assessment

KS 3/4 modern foreign languages (secondary classroom) – Peer assessment² (1:20-4:37 minutes) – Example of whole class peer assessment in a grade 9 German classroom,
<http://teachfind.com/KS34-modern-foreign-languages-peer-assessment>

Peer to peer assessment – High school math lesson showing peers working on three levels of math examples and having students solve them and justify solutions using sticky notes (5:12 minutes),
<http://teachfind.com/teachers-tv/peer-peer-assessment>

Primary assessment for learning: Speaking and Listening: Year 1² (13.4 minutes) – Primary teacher helps students learn how to develop skills to look for key qualities in student work (success criteria) and begin to give feedback to peers based on the success criteria (13:42 minutes),
<http://teachfind.com/teachers-tv/primary-assessment-learning-speaking-and-listening-year-1>

² These videos are used in Module 4, Lesson 3.

Self-assessment and peer support³ (3:32 minutes) – Year 7 students rank their writing (“traffic lighting”) to tell them what they are good at and what they need to work on more,
<https://www.teachingchannel.org/videos/peer-teaching--2>

Self-assessment and peer-to-peer marking in a secondary school (4:25 minutes),
<http://www.schoolsworld.tv/node/3392>

Teacher moderation: Student teacher conferences – Upper elementary teacher provides descriptive feedback based on a rubric with one student, and asks another student for analysis of own writing (3:02 minutes), <http://www.youtube.com/watch?v=Pad1eAcsHho&list=UUkTf5EuPvT4ZTknb-FCk0yw&index=189>

Teacher tour of an elementary school formative assessment classroom (5:46 minutes),
<http://www.youtube.com/watch?v=leBuPKmXKIQ>

³ This video is used in Module 4, Lesson 4.